151670

EPA-ERTC/REAC
WORK LOCATION HEALTH AND SAFETY PLAN

Prepared by: Larry Lyons REAC Approval: Patrick Mahoney

Date: 08/27/2008 Amended -4/20/09

L0 INTRODUCTION

Site Name: Raritan Bay Slag Site (Laurence Harbor) WA/TDD: 0-0356.1

Original Safety Plan: Yes_ No X Modification No. 1

Location: Street No.:

City: Old Bridge Township County: Middlesex

State: New Jersey Zip Code: 08879

Site Contact: Mark Sprenger Site Phone #: 609-865-3925

Directions to Site: Travel from Edison, NJ to Laurence Harbor, NJ (See attached map)

1.1 Site/Incident Description

A.	Urban	X	Residential	___	Commercial	___
	Industrial	___	Rural	___	Remote	___
	Active	___	Inactive	___	Landfill	___
B.	Spill	___	Air Release	___	Fire	___
	HW Site	___	Other: waste material used for fill and to construct jetty			

C. Containers involved? ___ Yes X No
Drums: ___ No.# ___ Tanks ___ No. # ___
Describe condition: ___

D. Site size: ___ Terrain: Flat beach Weather: Fair

E. Are Regional START's Onsite? Yes ___ No X

F. Map attached: Yes X No ___

1.2 Summary Site History. The Laurence Harbor site is comprised of a seawall area, Cheesequake Creek outlet jetties, and a beach area located in the Raritan Bay at the outlet of the Cheesequake Creek. Contaminants of Concern (COCs) are primarily metals including lead (Pb), arsenic (As), copper (Cu), zinc (Zn), antimony (Sb) and tin (Sn) originating from foundry bottoms and battery waste, and potentially other materials. The waste material was used to construct the jetties and was used as a fill and stabilizing material for the seawall.

1.3 Background Infomation Sources (Report Titles, Names, Dates):

WAM

1.4 Scope of Work:

A.

Emergency Response	__	Air Sampling	__	Bioassessment	X
Confractor Oversight	__	Treatability Study	__	Soil Gas Sampling	__
Geophysical Monitoring	__	Well Sampling	__	Flux Chamber Sampling	__
Well Installation	__	Soil Sampling	__	Tank Sampling	__
Drum Sampling	__	Bulk Sampling	__	Waste Material Sampling	X
Lagoon Sampling	__	Sediment Sampling	X	Pore Water Sampling	X
Groundwater Sampling	__	Walk Through Assessment			__

B.

Task Description	Date of Activity
1. Seining for fish	September 9-12, 2008
2. Algae Sampling	September 9-12, 2008
3. Clamming	September 9-12, 2008
4. Sediment Sampling	September 9-12, 2008
5. Pore Water Sampling	September 9-12, 2008
6. Waste material Sampling	September 9-12, 2008
7. Geophysical Survey	April 23, 2009
8 Dive & Side Scan Sonar Assessment (See Attached Dive Plan)	Week of April 27th, 2009

Sampling at this site will be performed at or within the proximity of the sea wall and the jetties during low tide conditions. Biological sampling will include foraging fish, algae scraped off of jetties and sea wall, polychaete worms, clams, and ribbed mussels. Sediment samples will be collected within proximity of the biota samples using a frowel. Waste materials which is primarily the hardened rock-like material that make-up the sea wall and jetties will be collected by scraping or chiseling material from the surface and interior areas of the jetties and seawall.

Only potential exposure to the metals associated with the sea wall and jetties would be when possibly collecting the waste material from the sea wall and jetties and/ or sediment. Goggles will be wom when performing the sampling.

A geophysical survey of the site within the Old Bridge Waterfront Park will be performed using EM-31 and GPR to survey anomalies of suspected subsurface metals. No excavations will be performed.

A water-bome geophysical survey will be conducted from the EPA Biglane using Marine Sonic Scan© side-scan sonar with a 600 kilo hertz (kHz) towfish. The purpose of the survey will be to assess the distribution of the site materials extending out from the Cheesequake Creek Inlet jetties and the seawall along this coastal area. The results of the

side-scan survey will be verified and video documented by EPA-certified scientific divers from the ERT/REAC Dive Team. (See Attached Dive Plan).

2.0 PERSONNEL

EPA On-Scene Coordinator: _____

ERTC Work Assignment Manager/Site Supervisor: Mark Sprenger

REAC Task Leader/Field Supervisor: Larry A. Lyons

REAC/TAT Site Safety Coordinator: Larry A. Lyons

Subcontractor: None

Field Personnel/Responsibility:

Larry Lyons- Task Leader/Sampler

Erica Wentz - Environmental Technician

Martin Ebel - Geophysicist

Tim Macaluso - Diver and Geo Survey Support

Scott Douglas - Diver

Jon McBurney - Diver

Brian Holderness - Diver.

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS

3.1 Chemical/Exposure Hazards

X	Inhalation	__	Ingestion	__	Skin contact
__	Biological	__	Explosive	__	Pressure sensitive
__	Radioactive	__	Flammable	__	Water reactive

3.2 Physical Hazards

Heat	X	Scaffolds	__	Electroshocking	__
Noise	__	Weights/lifting	X	Underground utilities	__
Cold	X	Pressured air	X	Compressed gases	__
Boating	X	Overhead hazard	__	Unguarded floor opening/lagoons	__
Ladders	__	Building entry	__	Heavy machinery	__

Confined space (attach confined space entry plan) __

Diving (attach dive plan) X

Other: Working near water

3.3 Tables in Section 3.3 on the following pages provides a summary of chemical, biological, and physical hazards that could potentially be encountered by personnel during each task.

TABLE 3.3.1

TASK RISK ANALYSIS: CHEMICAL and BIOLOGICAL HAZARDS OF CONCERN

Task	Contaminiant	Exposure Limits	Source Concentration Onsite	Route of Exposure	Symptoms of Acute Exposure	Monitoring Device (Response Factor)
1-6	Lead	PEL: 0.05 mg/m^3 - TWA TLV: 0.05 mg/m^3 - TWA IDLH:100 mg/m^3 (as Pb) Human Carcinogen: (Agency: Class) EPA- Probable IARC- Possibly NTP- Reasonably anticipated	Jetty and seawall/ Unknown	Inhalation, Absorption Ingestion, Contact	Exposure to Lead may result in weakness, lassitude, insomnia, facial pallor, abdominal pain, colic (gaseous discomfort), darkened gum line, tremors, wrist and ankle drop, long term degeneration of the brain and disease of the kidney. Lead effects the eyes, gastro- intestinal tract, central nervous system, kidneys, blood, and gum tissue.	RAM (1)
1-6	Arsenic	PEL: 0.01mg/m^3 TWA [Carcinogen] TLV: 0.01mg/m^3 TWA IDLH: [5mg/m^3 - Carcinogen] Human Carcinogen: (Agency: Class) NTP: Known IARC: Known ACGIH: Confirmed	Jetty and seawall/ Unknown	Inhalation, Absorption Ingestion, Contact	Exposure to elemental Arsenic may result in the irritation of the nose, lungs and airways. Irritation of the nose tissue may then lead to a perforation between the 2 nostrils. Hyper- pigmentation may result due to skin contact. Arsenic affects the liver, kidney, lymphatic systems and is associated with lung and lymphatic cancer.	RAM (1)
1-6	Copper	PEL: 1.0 mg/m^3 TLV: 1.0mg/m^3 IDLH: 100 mg/m^3 (as Cu)	Jetty and seawall/ Unknown	Inhalation, Ingestion, Contact	Exposure to Copper may result in irritation to eyes, nose, throat; the development of a metallic taste, dermatitis and anemia. Copper effects the Eyes, skin, respiratory system, liver and kidneys.	RAM (1)
1-6	Zinc (Zinc Oxide)	PEL: 15mg/m^3 as a TWA (total Dust) TLV: 2 mg/m^3(resp. Dust) IDLH: 500mg/m^3	Jetty and seawall/ Unknown	Inhalation, Ingestion, Contact	Exposure to Zinc may result in metal fume fever(flu-like fever), dry throat, coughing, weakness, metallic taste, headache, blurred vision, lower back pain, vomiting, and fatigue. Zinc effects the Respiratory System.	RAM (1)

Task	Contaminant	Exposure Limits	Source Concentration Onsite	Route of Exposure	Symptoms of Acute Exposure	Monitoring Device (Response Factor)
1-6	Antimony	PEL: 0.5 mg/m³ TWA TLV: 0.5 mg/m³ TWA IDLH: 50 mg/m³	Jetty and seawall/ Unknown	Inhalation, Absorption Ingestion, Contact	Exposure to Antimony may result in irritation of the eyes, skin, nose, throat, mouth; cough; dizziness; nausea; vomiting; stomach cramps. Antimony affects the eyes, skin, respiratory and cardiovascular system.	RAM (1)
1-6	Tin	PEL: 2 mg/m³ TWA TLV: 2 mg/m³ TWA IDLH: 100 mg/m³	Jetty and seawall/ Unknown	Inhalation, Skin or Eye Contact	Exposure to Tin may result in irritation of the eyes, skin and respiratory system. Tin affects the eyes, skin and respiratory system.	RAM (1)

ACGIH American Conference of Governmental Industrial Hygienists
OSHA Occupational Safety and Health Administration
TAGA Trace Atmospheric Gas Analyzer
TWA Time-weighted average
STEL Short-term exposure limit
ppm parts per million
mg/m³ milligrams per cubic meter
Sd: Sediment; W: Water; S:Soil
PEL: Permissible Exposure Limit (8-hr Time Weighted Average airborne concentration enforced by the Occupational Safety and Health Administration, see 1910.1000, Final Rule, Tables Z-1, Z-2 and Z-3)
TLV: Threshold Limit Values (8-hr Time Weighted Average airborne concentrations recommended by the American Conference of Governmental Industrial Hygienists, 2008-Threshold Limit Values for Chemical and Physical Agents and Biological Exposure Indices)
IDLH: Immediately Dangerous to Life and Health (Escape values designed to ensure that a "worker could escape without injury or irreversible health effects ... in the event of the failure of respiratory protection equipment.)
NTP: National Toxicological Program (one group who evaluates and lists carcinogens)
IARC: Intemational Agency for Research on Cancer (one group who evaluates and lists carcinogens)

TABLE 3.3.2
TASK RISK ANALYSIS: PHYSICAL HAZARDS OF CONCERN

PHYSICAL HAZARD	TASK	EXPOSURE CONTROL PROCEDURES
Heat (ambient)	1-8	• Prevention protocol and biological monitoring will be instituted at temperatures exceeding 70F. • Physiological monitoring will be conducted in accordance with the attached Tables 3.3.4 and 3.3.5. • Work/Rest cycles will be instituted based on physiological monitoring • Personnel should consmne 16ozs of water prior to beginning work and at intervals (breaks, lunch) throughout the day • Non-caffeinated liquids (water, elecfrolyte drinks, juice kept at 50-60F) will be maintained on-site throughout the work shift. • Signs of Heat Exhaustion and Stroke will be reviewed (attached), employees will monitor fellow field team members for observance of these signs.
Rain	1-8	• May increase risk of hypothermia, see hazard preventions listed in the "Cold" Section of this Table. • Prevention protocol and biological monitoring will be instituted at temperatures exceeding 70F. • Rain repellant outer gear should be wom by employees. An additional change of clothing should be maintained for removal and replacement of wet clothing. • Rest breaks shall be taken in a warm, sheltered area (van, frailer, nearby commercial space). • Work areas where water may accumulate and create additional slip/trip/fall hazards should be provided with drainage or barriers. • Employees should maintain and increase awareness of their physical surrounding, particularly when operating or when working around heavy equipment.
Electrical Storms	1-8	• At the first sign of lightning cease work, seek enclosed shelter. Work will not resume outside until 30 minutes after the last sight of lightning.
Housekeeping	1-8	• Provide adequate storage space for site equipment and supplies. • Assign time and responsibilities for daily clean-up prior to departure from site. • Ensure lunch areas are maintained free of empty bottle, containers and paper. Provide ttash receptacles with enclosed tops/covers in the designated lunch area and throughout site as necessary. • Do not accunulate flammable or combustible liquids on floors, walls, etc. Spill must be cleaned immediately. • Provide adequate lighting in and around all work areas, passageways, stairs and ladders. Keep all such areas clear of debris, supplies, and any other objects. • Mark and/or secure any object (extension cord) which must ttaverse a passageway. • Ensure that supplies are stored in neat stockpiles and that access aisles are created and kept clear of stored objects. • Remove combustible materials routinely, do not allow accumulation in areas where flammable and combustible liquids are stored, handled or processed.

Remote Area	1-8	• May add or increase risks associated with conducting field tasks due to: difficult vehicular access, limited emergency services, heavy vegetation and undergrowth, and native wildlife. • Diligent adherence to prevention protocol identified for site hazards. • Where possible assess roads and work areas should be undercut and cleared. • Ensure that proposed communication (i.e., cellular phone) is operable, and if not a back-up (public phone, or area where cellular phone is operable) is identified to field team members. • If accessing remote area of occupied site, identify final destination and return time to site personnel prior to departure.
Neighborhood	1-8	• Hazards associated with neighborhoods arise as a result of; socio-economic factors; client/resident relationship; client/labors relationship; physical design factors (lighting, secured barriers, remote location); value of equipment and materials; benefits of sample tampering. • Ensure adequate site security provided for on-going activities. Site security may be provided by client, or may need to be contracted by REAC personnel. Enforcement of security functions should be assigned to properly trained and authorized individuals. • Avoid verbal and physical controntation. • Ensure REAC personnel work in teams or groups when accessing and conducting activities in sensitive locations. Establish a communication procedure for obtaining on and off site assistance. • Provide adequate commmication devices (mobile phones or radios) for teams working in sensitive locations. • Provide visible security precautions (fencing, "keep out" signs). Provide locked storage facilities on-site; constmct adequate barriers for equipment or sampling devises which will remain unattended at off-site or unsecured site locations. • Use discretion in discussion related to site work when conversing off-site and off-hours.
Vehicular Travel	1-8	• All drivers must be appropriately licenced when operating a vehicle. • All traffic mles and regulations, and all traffic control signs and devices should be followed. • Drivers of rental or unfamiliar vehicles should become familiar with all controls before operating the vehicle. • Drivers should operate vehicles defensively, exercise special care when operating on unfamiliar roads or during inclement weather, and should yield to pedestrians. • Trucks should be backed imder the direction of a signal person when operator cannot view rear area clearly. • Seat belts should be provided and used by each individual in the vehicle. • Personnel must not ride on outside or back of vehicles. • Materials should be loaded within limits of vehicle weight capacity, should be secured, and should not protmde trom rear of truck. • Personnel may not remain in or on vehicles being loaded by excavating equipment unless cab is adequately protected against impact. • Maintain road flares, fire extinguishers, first aid kits, and other safety equipment where necessary.
Hand Tools	1-8	• Inspect hand tool for defects that will impair their strength or render them unsafe, unsafe hand tools will not be used. • Maintain tools in good repair. • Use tools only for their designed purpose.

Working Over Water	7	• Provide engineering controls such as guardralls, toeboards, or other personal protective equipment to prevent fall. • Install safety nets for each workplace >25 ft above ground or water surface. • Provide proper Type I or II floatation devices to persomel. Personal Flotation Devices (PFDs) shall be wom when there is a potential drowning hazard. • Provide at least 1 lifesaving skiff, properly trained personnel shall be available for operation of the skiff during working hours. Skiff shall be equipped with: four oars, oarlocks, boat hook, ring buoy (90ft line), PFDs, and first aid kit.
Diving	8	• Refer to attachment: Dive Plan
Using Boats	8	• All occupants working aboard a class A vessel (less than 16' long) Zodiac, john boat, etc. must wear a type I, II, III or V Personal Flotation Device (PFD) • All occupants working aboard a class I vessel (!6" to less than 26') Boston Whaler must wear a type I, II, III, or V PFD, plus there must be a type IV immediately accessible. • Maximum capacity must be identified on the boat (plate mounted on boat), factor in personnel, equipment, and samples when determining when determining the gross weight of the proposed voyage. • Operator must have proven experience, if other than a Lockheed Martin employee is operating with Lockheed Martin persomel on-board the individual must carry a current USCG Captain's license and rating for the type of vessel being operated. • Boat must be stable (not a canoe or kayak) for use during sampling and/or monitoring projects. • Provide adequate fire extinguishing capability, class A boats need at least one B I .Class 1 boats need two B I's and One B II extinguishers to do so. • Provide required audible signal (for communication when meeting, crossing or passing other boats). • Additional information is contained in the attached Standard Operating Procedure.
Working in Water (Non-Dive Operations)	1-6	• Must have at least one "buddy" on land who can contact the authorities in the event of an emergency. • If water is contaminated take steps to keep water off body (dry suit, etc.). • If water is not contaminated use the following: 1. Use wetsuit if going in water that has the possibility to be above the waist. If there is any chance that water could be over the chest use PFDs. A tether should be used if there is any chance of workers being swept "out to sea", step in a hole or sink in the mud. 2. Use chest waders if going in water below the hips but above the calves. WARNING: water filling in chest waders is very dangerous. Be sure to go over using knife with workers in the water to cut free of chest waders if in use. 3. Hip waders can be used in water up to the knees. 4. Use boots if water level will be below the calves. • Have ring buoy with throw line sufficient to reach worker (90 ft line minimum) on land so buddy on land can toss to worker in water. The buddy on land needs sufficient strength to "reach" the worker in the water and assist worker in exiting the water. • Workers in water must have dive knife with them while in the water. • In tidal areas workers must have current tide charts available and avoid working during periods when the tide is coming in (high tide) or with strong tidal currents.

Biological (insect, tick, poisonous plants)	1-8	• Hazards include: bites trom snakes; infected wild animals; rodents; insects; ticks and contact with poisonous plants. • Snakes: use care when reaching into or moving objects, be famihar with habits and habitats of snake indigenous to area, wear ankle high or higher steel-toe/shank boots, clear grass/overgrown areas if possible. • Wild animals: avoid contact with wild/stray animals, be weary of noctumal animals seen during the day, eliminate food sources and nesting sites, store trash/garbage in metal/thick plastic lidded containers, cut grass/under brush where possible. • Insects: Be aware of insect bom disease outbreaks in area of travei, insect repellant, Long sleeves/pants. • Ticks: same as those for insect, tuck pant leg into socks and boots, conduct tick checks during breaks and at end of shift, wear light colored clothing, remove and save tick immediately. • Plants: Wear long sleeves/pants, use barrier creams if highly sensitive, do not contact plants which resemble poison ivy (3-leaves, pointed leaf), oak (3-leaves, rounded leaf), or sumac (paired leaves, white fruit). • Blood bome Pathogen hazards and controls are identified in Lockheed Martin's Exposure Control Plan, training is conducted annually.

TABLE 3.3.3

TEMPERATURE EXTREMES: SIGNS OF EXCESSIVE EXPOSURE

Temperature Extremes	Sign/Symptom of Excessive Exposure
Heat Exhaustion	State of weakness or exhaustion caused by the loss of fluids form the body: Pale, clammy, moist skin; profuse perspiration and extreme weakness; body temperature may be normal; weak/rapid pulse; shallow breath. **Treatment:** Remove individual to cool, air-conditioned, or temperature controlled area; loosen clothing; place in head-low position; provide rest. Have patient drink 1-2 cups of water immediately, and every 20 minutes until symptoms subside.
Heat Stroke	Acute, dangerous reaction to heat stress caused by failure of body's heat regulating mechanisms resulting in a rapid rise in body temperature, brain damage, and death: red, hot, dry skin; confusion; extremely high body temperature; rapid respiratory and pulse rate; unconsciousness or coma. **Treatment:** Remove from heat source and cool victim rapidly by soaking victim in cool (NOT COLD) water; sponge body with cool water to reduce temperature to safe level (<102F) Monitor vital signs, obtain immediate medical help.
Heat Cramps	Acute painful spasms of voluntary muscles caused by inadequate electrolyte intake: muscle spasms, most notably the abdomen and extremities. **Treatment:** Remove victim to cool area and loosen clothing.
Cold-Frostbite	Local freezing of tissue resulting when heat loss from an extremity is faster than heat replacement by the circulating blood. Frost bite occurs in stages; incipient (sudden blanching or whitening of skin); superficial (waxy or white skin which is firm to the touch, underlying tissue is resilient); and deep (cold, pale or darkened skin which is solid). **Treatment:** Move individual to warm environment, warm affected area by placing next to warm skin (avoid fires, hot water, extemal heaters) provide warm non-caffeinated drinks. After re-warming affected area evaluate, bandage (if necessary) and do not allow blisters to be broken. Do not rub frostbitten area, obtain medical care as necessary.
Cold-Hypothermia	Occurs when a heat loss in excess of heat gain results in a core body temperature drop. Most cases develop in air temperatures between 30-50F when compounded with water immersion or soaking and windy conditions. Symptoms include: uncontrolled fits of shivering; vague, slow, slurred speech; irrational actions; memory lapses; incoherence; fumbling hands, frequent stumbling, lurching gait; apathy, listlessness, and sleepiness; glassy stare; slow pulse and respiration. **Treatment:** Move individual to warm environment, remove any wet clothing, provide additional heat sources (warm blanket, bath, body contact); provide warm non-caffeinated fluids, candy and sweetened food, obtain medical assistance.

TABLE 3.3.4

PERCENT SUNSHINE FACTORS HEAT STRESS PREVENTION AND MONITORING		
Percent Sunshine (%)*	Sunshine Factor	Adjusted Temperature Calculation@
100	1	Air Temp + 13(1) = Adjusted Temp
50	0.5	Air Temp + 13(0.5) = Adjusted Temp
0	0	Air Temp + 13(0) = Adjusted Temp

*Linear Scale, any estimated percent sunshine divided by 100 will provide the corresponding Sunshine.
@Calculation: Air Temperature (in degrees F) + 13(Sunshine Factor)=Adjusted Temperature.

TABLE 3.3.5

PHYSIOLOGICAL MONITORING SCHEDULE HEAT STRESS PREVENTION AND MONITORING		
Adjusted Temperature (Table 3.3.4)	Monitoring Schedule Level **D** (Permeable Clothing)	Monitoring Schedule Level **C, B** or **A** (Impermeable Clothing)
90 °F or above	After each 45 minutes of work	After each 15 minutes of work
87.5°F-90°F	After each 60 minutes of work	After each 30 minutes of work
82.5°F-87.5°F	After each 90 minutes of work	After each 60 minutes of work
77.5°F-82.5°F	After each 120 minutes of work	After each 90 minutes of work
72.5°F-77.5°F	After each 150 minutes of work	After each 120 minutes of work

Physiological monitoring should include oral temperatures and/or pulse rates. Physiological monitoring should be conducted at the beginning of each rest period, the frequency of which is specified above.

Oral Temperature Criteria: An oral temperature in excess of 99.6 degrees (or 1 degree above individuals baseline) will require that the next work period be reduced by 33%. This shall continue until the body temperature is maintained below 99.6 degrees (or 1 degree above baseline).

Pulse Rate Criteria: Heart rate should be measured by the radial pulse for 30 seconds. If the heart rate exceeds 110 beats/minute at the beginning of the rest period the next work period should be reduced by 33%.

4.0 PERSONNEL TRAINING REQUIREMENTS

Consistent with OSHA's 29 CFR 1910.120 regulation covering Hazardous Waste Operations and Emergency Response, all site personnel will be trained in accordance with the requirements. At a minimum, all personnel will be trained to recognize the hazards on-site, the provisions of this SHSP, and personnel responsible for safety at this site.

4.1 Site Specific Training Topics

The following topics will be discussed by the REAC field team leader prior to commencement of onsite activities:

_X_ Site Hazards _X_ Emergency Procedures _X_ (Tables in Section 3.3)

Other:_____

5.0 PERSONNEL PROTECTIVE EQUIPMENT

5.1 Protective Ensemble

Tasks: _____	Tasks: ____	Tasks: 1-7
Level B __	Level C __	Level D D
__ Barricade	__ Barricade	__ Barricade
__ Saranex	__ Saranex	__ Saranex
__ Tyvek	__ Tyvek	__ Tyvek
__ Other: __	___ Other: _____	__ Other: _____
__ SCBA	___ APR	X Eye Protection
__ Tetherline	___Cartridge: _____	__ Booties
__ Booties	___Booties	__ Hard Hat ()
__ Surgicals	___ Surgicals	X Surgicals
__ Gloves: __	__ Gloves: __	__ Work Gloves: __
__ Overgloves: __	___ Overgloves: _____	__ Escape Pack
__ Hard Hat	___ Hard Hat (same)	__ Steel Toe/Shank Boots
__ Steel Toe/Shank Boots	___ Steel Toe/Shank Boots	X Chest Waders/Hip Boots/ Wet Suits (Tasks 1-6)

Additional Protective Clothing:

_X_ Rain Gear	_X_ Chest Waders/ Wet Suits	__ Lineman's Gloves
__ Shoulder-length Gloves	__Insulated Coveralls	_X_ Goggles- Eye Protection

5.2 Justify levels of protection selected:

Tasks 1-6 When collecting biota samples, REAC contractors will be standing in water, so to keep dry and warm chest waders or hip boots will be wom. Also during collection of biota, sediment and waste samples, surgical gloves will be wom to protect from contact with contaminants. Task 7 No special PPE. Task 8 See Dive Plan.

6.0 SITE AIR MONITORING PLAN (Not Applicable)

6.1 Instrument Calibration

Required Instmment	Calibration Date	Battery Check
__ Multi RAE	_____	_____
__ OVA	_____	_____
__ CGI	_____	_____
__ Monotox: Type: __	_____	_____
__	_____	_____
__	_____	_____
__ Oxygen Detector	_____	_____
__ RAM-Type _____	_____	_____
__ Photovac	_____	_____
SKC Pumps	_____	_
__ Draeger Tube Type: __	_____	_____
Radiation Meter		
__ Other _____	_____	_____

6.2 Person(s) Responsible for Monitoring (__ indicates competence test checkout):

Larry Lyons — Martin Ebel

Scott Grossman —

6.3 Type of Monitoring:

__	Survey/Characterization	__	Perimeter
__	Work Zone	X	Exposure/Breathing Zone

6.4 Objective of Monitoring: Worker Protection

6.5 Action Levels: If any 'unknovm' or chemical odors are detected that may be a health risk the area must be evacuated, the work area must be re-assessed and the steps must be discussed with the REAC HSM prior to re-entry.

Table 6.5-General Action Limit Guidelines for Health and Safety Planning

Chemical/Physical Contaminant	Action Limit or Calculation		Action
Flammable/Explosive Atmosphere	Ambient Air < 10 % LEL 10 - 20% LEL > 20% LEL	Confined Space 0 - 1% LEL 1 - 10% LEL > 10% LEL	Continue Investigation Continue monitoring, use extreme caution Evacuate immediate area, explosion hazard present
Oxygen	Ambient Air 19.5 - 25 % < 19.5% > 25%	Confined Space 19.5 - 23.5 % < 19.5 % > 23.5%	Continue Investigation, normal = 21% Investigate only in Level B Protection, Oxygen Deficient Evacuate immediate area, Oxygen Enriched/Fire Hazard
Radiation	3x Backgroumd - 1 mR/hr > ImR/hr		Continue Investigation, consult H&S Manager (possible source) Evacuate immediate area, radiation source/hazard present. Re-enter only under advisement of H&S Manager.
Organic and Inorganic Gases and Vapors	Calculation: 1. (TLV or PEL) X (½) X (RF of Instrument) 2. (IDLH or MUC or Cartridge Rating) X (½) X (RF of Instrument)		Upgrade to Level C/B Protection as outlined in HASP Upgrade to Level B Protection as outlined in HASP
Particulates (Unknown Site Concentrations)	Calculation: 1. (TLV or PEL) X (½); use RAM/MiniRAM assume RF=1 2. (IDLH or MUC or Cartridge Rating) X (½); use RAM/Mini RAM assume RF = 1		Upgrade to Level C Protection as outlined in HASP Upgrade to Level B Protection as outlined in HASP
Particulate (Known Site Concentrations)	Calculation: 1. $\frac{(1x10^6)X(TLV\ or\ PEL)}{(Cone.\ In\ mg/kg)(2)}$ 2 $\frac{(1x10^6)X(IDLH\ or\ MUC\ or\ Cartridge\ Rating)}{(Cone.\ In\ mg/kg)(2)}$ Note: Use RAM/MiniRAM, assume RF=1		Upgrade to Level C Protection as outlined in HASP Upgrade to Level B Protection as outlined in HASP.

7.0 MEDICAL MONITORING

All personnel are expected to maintain a current status with respect to their employers medical monitoring program. Lockheed Martin maintains an annual schedule of update medicals. Subconiractors will be expected to provide documentation of current medical.

8.0 SITE CONTROL

8.1 Buddy system is required for all site work involving levels of protection or potentially representing a risk to personnel.

8.2 Site communications plan:

__	Radio's	__	Air Hom
__	Whistle	__	Megaphone
X	Hand Signals:		

Signal	Definition
Hands clutching throat	Out of air/can't breath
Hands on top of head	Need assistance
Thumbs up	OK/I'm alright/I mderstand
Thumbs dovm	No/negative
Arms waving upright	Send backup support
Grip partners wrist	Exit area immediately

8.3 Site Work Zones:

The Exclusion Zone is defined as the area where contamination is either known or likely to be present, or because of activity, will provide a potential to cause harm to personnel. Entry into the Exclusion Zone requires the use of personnel protective equipment.

The Contanrination Reduction Zone is the area where personnel conduct personal and equipment decontarnination. It is essentially a buffer zone between contaminated areas and clean areas. Activities to be conducted in this zone will require personal protection as defined in the decontarnination plan.

The Support Zone is situated in clean areas where the chance to encounter hazardous materials or conditions is minimal. Personal protective equipment is therefore not required.

Site work zone definition can be found:

X	Site map	__	Sketch on reverse of this page

8.4 Nearest Medical Assistance

Directions and a map to the nearest medical assistance is attached to this plan.

The following personnel on-site have current certification on CPR and/or First Aid.

NAME	CPR EXPIRATION DATE	FIRST AID EXPIRATION DATE
Larry Lyons	01/10	02/09
Erica Wentz	01/10	01/11
Tim Macaluso	01/10	01/11

8.5 Standing Orders

Standing Orders for Exclusion Zone

- o No smoking, eating, or drinking in this zone.
- o No horse play.
- o No matches or lighters in this zone.
- o Check-in on entrance to this zone.
- o Check-out on exit irom this zone.
- o Implement the communications system.
- o Line of sight must be in position when appropriate.
- o Wear the appropriate level of protection as defined in the SHSP.

Standing Orders for Contamination Reduction Zone

- o No smoking, eating, or drinking in this zone.
- o No horse play.
- o No matches or lighters in this zone.
- o Wear the appropriate level of protection.

9.0 DECONTAMINATION PLAN

Describe decontamination sequence for each level of protection to be used on-site.

Level D
Step 1 Remove Surgicals

Step 2 Wash hands and face

Step 3 Shower ASAP

Are personnel required to assist with decon? __ Yes _X_ No

If yes, what level of protection is required for those assisting?
(Circle one) B, C, D.

Describe disposition of wastes: ___Containerized and brought back to Edison facility or left on-site.___

10.0 CONTINGENCY PLANNING

10.1 Identify location of the following during the site orientation.

X	First Aid Kit: Rental vehicle	Eye Wash: _____
__	Stretcher: _____	Emergency Shower: _____
__	Fire Extinguisher: _____	
__	Public Telephone: _____	
X	Site Telephone: WAM	
X	Mobile Telephone: Task Leader	
__	Two-Way Radios: _____	
X	Telephone Contact Lists: In HASP in vehicle	
__	SCBA's: _____	
__	Escape Packs: _____	
X	Evacuation Routes: Determined and communicated on-site	

10.2 Emergency Contact/Notification System

The following list provides names and telephone numbers for emergency contact personnel.

Organization	Contact	Telephone
Ambulance:		(732) 952-8755
Police: Old Bridge PD		(732) 679-3400
State Pohce: NJ State Pohce		(732) 264-4150
Fire: Perth Laurence Harbor FD		(732) 566-7533
Hospital #1: South Amboy Medical Center, 242 S. Feltus St. S; South Amboy		(732)721-1000
Hospital #2: Bayshore Commmity Hospital, 727 N. Beers St, Homdel		(732)739-5900
Poison Conirol Center		(800) 962-1253
Regional EPA: Region II		(732) 906-6927
CHEMTREC		(800) 424-9300
TSCA HOTLINE		(202) 554-1404
RCRA HOTLENE		(800) 424-9346
CDC	(DAY)	(404) 452-4100
	(NIGHT)	(404) 329-2888
BUREAU OF ALCOHOL, TOBACCO & FIREARMS		(800) 424-9555, (202) 566-7777
NATIONAL RESPONSE CENTER		(800) 424-8802
PESTICIDE INFORMATION SERVICE		(800) 858-7378
BUREAU OF EXPLOSIVES, A.A. RAILWAYS		(202) 639-2229
LOCKHEED REAC OFFICE		(732) 321-4200
FEDERAL EXPRESS - HAZARDOUS MATERIAL INFO		(901) 922-1666
Dennis Miller, REAC Program Manager		(732) 321-4272 (W) (732) 906-1799 (H) (609) 865-9307 (Cell)
Patrick Mulrooney, Health & Safety Manager		(732) 321-4203 (W) (609) 865-9321 (Cell) (908) 369-0093 (Home)

10.3 Medical Emergencies

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics.

Any person being transported to a clinic or hospital for treatment should taken with them information on the chemical(s) they have been exposed to at the site. This information is included in Section 3.0 of this plan. Map with directions to the hospital can be found attached to the back of this document.

10.4 Fire or Explosion

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival, the designated personnel will advise the fire commander of the location, nature, and identification of the hazardous materials onsite.

If it is safe to do so, site personnel may:

- o Use fire fighting equipment available onsite to control or extinguish the fire; and,
- o Remove or isolate flammable or other hazardous materials which may contribute to the fire.

10.5 Spill or Leaks

In the event of a spill or a leak, site personnel will:

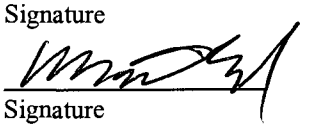
- o Inform their supervisor immediately;
- o Locate the source of the spillage and stop the flow if it can be done safely; and,
- o Begin containment and recovery of the spilled materials with sorbent (vermiculate, etc.).

11.0 CONFINED SPACE

__X__ No confined space entry anticipated.

12.0 ACKNOWLEDGMENT

I have read, understood, and agreed with the information set forth in this Health and Safety Plan and will adhere to the protocols specified herein.

Work Assignment Mgr	Signature	Date
Task Leader/Field Supervisor	Signature	Date
EPA	Signature	Date
Site Safety Coordinator	Signature	Date
Martin Ebel Field Team Member	 Signature	4/24/09 Date
Field Team Member	Signature	Date
Field Team Member	Signature	Date
Field Team Member	Signature	Date
Field Team Member	Signature	Date

SUBCONTRACTORS:

Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date

SITE SAFETY COORDINATORS REPORT: Please return this page with a copy of the plan and acknowledgment form to REAC Health and Safety Manager, and if applicable, the ERTC/TAT RSO.

1.0 Site Name: _____

W.A.#: TDD: _____

2.0 Tasks Performed — Dates of Activity

_____ _____

_____ _____

_____ _____

_____ _____

3.0 Future Activity? Yes ___ No ___ If yes, explain: _____

_____

_____

4.0 Describe if there were any changes made to the protection program?

_____

_____

_____

5.0 Summarize Findings (be sure to discuss monitoring results).

_____

_____

_____

6.0 Was the Health and Safety plan adequate? Yes ___ No ___

What changes can be made for future activities?

_____

_____

_____ _____

Signature REAC Health and Safety

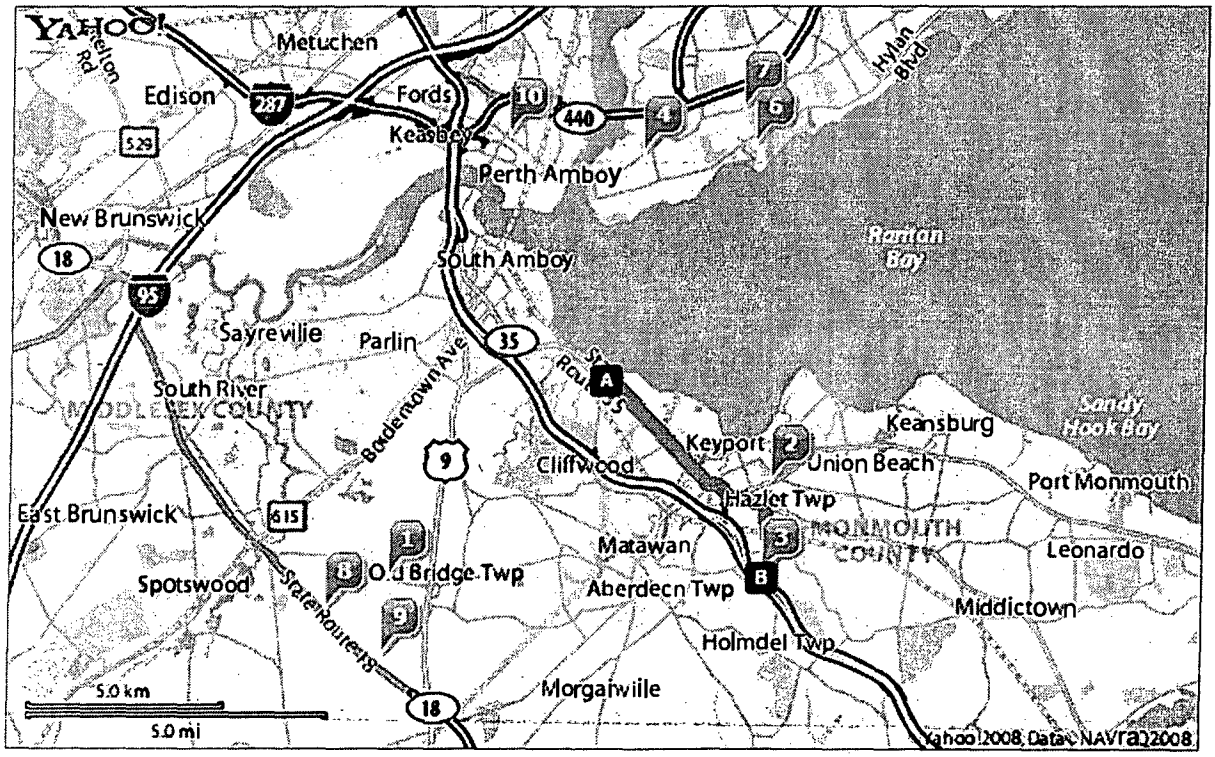
Directions to Bayshore Community Hospital (732) 739-5900

YAHOO! LOCAL Maps

Total Time: 12 mins, Total Distance: 5.57 miles

		Distance
A	1. Starting in **LAURENCE HARBOR, NJ** on **LAURENCE PKY**	go 211 ft
	2. Make a U-Turn on **LAURENCE PKY(CR-626 N)**	go 422 ft
	3. Turn R on **STATE ROUTE** 35(RT-35)	go 1.11 mi
	4. Continue on **RT-35**	go 2.7 mi
	5. Turn R on **HOLMDEL RD(CR-4)**	go 1.41 mi
	6. Turn R on **N BEERS ST**	go 0.23 mi
B	7. Arrive at 727 **N BEERS ST, HOLMDEL,** on the R	

Time: 12 mins, Distance: 5.57 miles



Your Points of Interest

1. **Old Bridge Veterinary Hospital** Phone: (732) 679-1850 ★★★★★ 2400 County Road 516 Bldg 2017 Old Bridge, NJ 08857
2. **Bayshore Hospital Ftnes & Wins** Phone: (732) 335-8197 1420 Rt-36 Hazlet, NJ 07730
3. **Bayshore Community Hospital** Phone: (732) 739-5900 727 N Beers St Holmdel, NJ 07733
4. **Tottenville Medical Pavillion** Phone: (718) 356-5600 ★★★★★

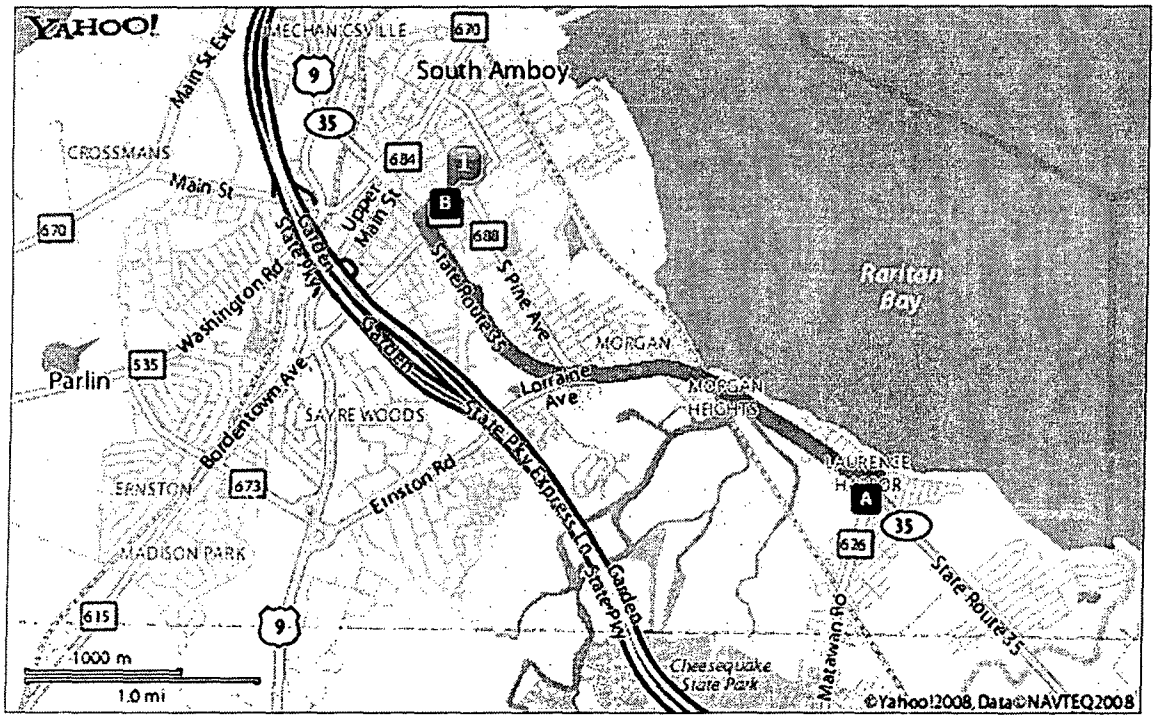
Directions to South Ambroy Medical Center (732) 721-2254

YAHOO! LOCAL Maps

Total Time: 7 mins, Total Distance: 3.13 miles

		Distance
A	1. Starting in **LAURENCE HARBOR, NJ** on **LAURENCE PKY**	go **211** ft
	2. Make a **U-Turn** on **LAURENCE PKY(CR-626 N)**	go **0.14** mi
	3. Make a **U-Turn** at **SHORELAND CIR** onto **LAURENCE PKY**	go **422** ft
	4. Turn **R** on **STATE ROUTE 35(RT-35)**	go **2.17** mi
	5. Bear **R** on a local road	go **0.12** mi
	6. Turn **R** on **STATE ROUTE 35(RT-35 N)**	go **0.43** mi
	7. Turn **R** on **CATHERINE ST**	go **0.15** mi
	8. Turn **R** on **FELTUS ST S**	go **53** ft
B	9. Arrive at **242 S FELTUS ST, SOUTH AMBOY**, on the **R**	

Time: 7 mins, Distance: 3.13 miles



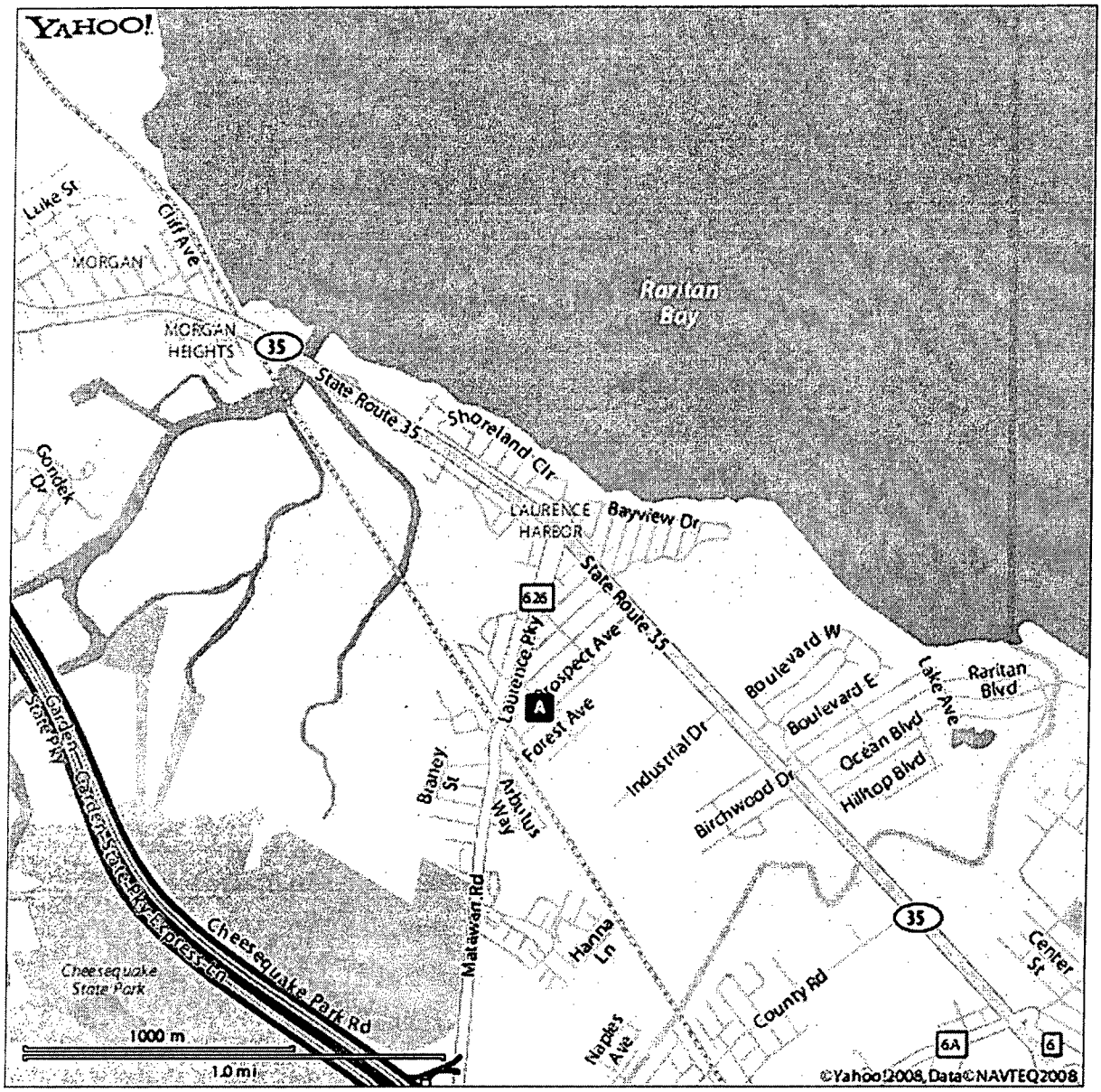
Your Points of Interest

1. **South Ambroy Medical Center Phone: (732) 721-2254**
   242 S Feltus St South Amboy, NJ 08879

When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.

Map of Laurence Harbor, NJ 08879

YAHOO! LOCAL Maps



When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.